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*Jacob Walden*

**THE SOUTHERN  
AGRICULTURIST,  
HORTICULTURIST,**

AND

**REGISTER OF RURAL AFFAIRS.**

ADAPTED TO THE

**Southern Section of the United States.**

**NEW SERIES.**

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**DECEMBER, 1842.**

**EDITED BY J. D. LEGARE.**


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## A DAY ON COOPER RIVER,

BY JOHN B. IRVING, M. D.

THE Interesting Numbers of “A Day on Cooper River,” with an addition to the Fifth Number, containing Mr. MYRICK’S *mode of Cultivating Rice*, have been published by the Subscriber, in pamphlet form.—Price 50 cents.

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## NOTICE.

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☞ Sir, the amount due by you on the books of the *Southern Agriculturist*, is \$

It is with regret that I am compelled to resort to this mode of making collections, but yielding to the wishes of some of the friends of the Journal, it is my intention to continue its publication, and as every Dollar which is due for the work will be necessary to enable me to do so, your prompt attention in discharging the small amount due, while it cannot inconvenience you, will materially aid me. The amount due by each defaulting subscriber is trifling and unimportant, but the aggregate is large and of considerable importance to me. Be good enough therefore, my dear sir, to take this into consideration, and be kind enough to make me an early remittance.

A. E. MILLER, *Publisher.*

*Notice.*—Discontinuances must be sent before the 20th of January 1843, or the work will be continued to be sent.



## TO OUR PATRONS.

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**I**T was our intention (and we so said to several friends) to discontinue the publication of the SOUTHERN AGRICULTURIST, at the conclusion of the present Volume. But many have expressed regret that this should be done, and on overlooking our accounts, we find that we have not such great cause of discouragement as we at first apprehended, at least as far as pecuniary matters are concerned, for we have received as much as pays all expenses and leaves a small balance in our favor. Our greatest source of discouragement, has been the want of original matter. We have been able to furnish a far less quantity than we expected, but if our planters would not communicate their experience and furnish us with as much original matter as was necessary, yet were we not idle, but carefully selected from the Agricultural and Horticultural publications of Europe and America, such articles as could not fail to be interesting to the Southern Planter. 'Tis true, we were not content with merely doing this, we wished to do more, but we were unable to do so, and were afraid that our friends were tired of us. Such, however, seems not to be the case, but to a limited extent; and our friends being willing to continue to patronize the work conducted as it was the past year, we are determined to carry it on at least one year longer. How much longer, will depend much upon them. We will give all the original matter we can by any possibility command, and will as heretofore carefully select such articles as may appear in the periodicals of the day,

which we may think adapted to our climate. We have been advised to assume a newspaper form, and to issue a paper weekly, but this would prevent the *Agriculturist* from being bound and placed in our Libraries for future reference.

We shall therefore continue it in its present form, but shall reduce the number of pages from 56 to 40, and shall make a corresponding reduction in the price, of from \$5 to \$3. These alterations we hope will meet with the approbation of our friends, and secure the patronage of many.

We thus most willingly yield to the wishes of our friends, for none would regret more sincerely than we, the discontinuance of this Journal. And now in conclusion, we earnestly solicit an increased patronage, both in the shape of *paying* subscribers and original contributors.

A. E. MILLER, *Publisher.*

#### **TERMS:**

Three Dollars, payable in advance ;—for two copies \$5; Societies and Clubs can be supplied with ten copies for \$20, payable in advance.

# THE SOUTHERN AGRICULTURIST.

(NEW SERIES.)

Vol. II.

FOR DECEMBER, 1842.

No. 12.

For the Southern Agriculturist.

November 17, 1842.

## ON PLANTING CORN.

*Mr. Editor,*—A rainy day affords me the leisure (and I embrace it) of giving you the result of an experiment made in corn planting, during the season just passed, which though not remarkable, shows how much can be done by manure, even on inferior lands, and will serve to encourage the desponding Agriculturist who has come to the conclusion, that his fields are too poor to be benefited by manure, and that the best thing he can do is to remove to the far West.

Cooper River has been kindly introduced to the notice of our community, by one whose "DAY" on that little stream, has contributed much to the gratification of those who delight in the effusions of genius, or the reminiscences of by gone times. Its banks, its indentations, its residences, the geneological history of the first settlers, and its castle of defence, have all been vividly depicted; the richness of its low grounds, and the success with which they have been cultivated, have all been eulogised. Of the high lands nothing has been said, and indeed Mr. Editor, little can be said of it that is advantageous, for it is poor and hitherto has not been productive, but the experience of the last summer has satisfied us, that nothing but attention is wanting to ensure us success, in this as in the other departments of Agriculture. Within our reach it has pleased a beneficent providence to place the means of enriching the soil to any extent; the rice-straw, the corn-shuck, the oak leaves, the scraping of ponds, and the pine-trash, are all around us in profusion, and it needs not the light of philosophy to teach us, that they contain in themselves, the pabulum, which is essential to productiveness.

The rice-planter is too easily satisfied; the large yield of the swamp renders him indifferent to the corn-field, which makes so

small a compensative return for the labor bestowed upon it, and he seldom goes farther than to regret the poverty of his high land, and if he does not "buy corn," the extent of his ambition seems gratified. But Mr. Editor, the times are changed, and we must change our habits to meet them; the mountain will not go to Mahomet and Mahomet must go to the mountain. Our wants are many, and the prices of our produce are low, we must add something to our selling crop, and I have no doubt but that we may become one of the granaries of the State, and that we shall be a corn, as well as a rice selling people. Several of my neighbors and myself during the spring that is gone, determined to select an acre, and decide if possible what it could be made to produce. In its natural state I do not think the land would yield more than six or eight bushels to the acre, and some of it would soon fail of doing this. I will without further comment, give you a succinct account of the process adopted in the cultivation of one of those acres. An acre plantation measure (150 feet deep by 300 long) was selected, and the old beds, (for it had been many years planted in corn) were levelled. Seventy (70) horse cartloads of manure were distributed over the land in heaps. The acre was now marked out with the hoe in chops, distant 5 feet from centre to centre. Upon these chops the manure was spread with care and divided as equally as practicable. A flat, broad and low bed was now made up, the top of the bed being about 2 feet in width. On the 14th of March, flint corn, which had been carefully selected the preceding season, from stalks bearing 2 or 3 ears, was planted on each side of the bed, so as to make two rows on each bed, but the grains were dropped diagonally, so that no two grains were directly opposite each other, and at such distances as would not leave more than ninety stalks on each bed, and of course giving 5,400 stalks to the acre. The land being in good tilth, the corn soon came out of the ground, and for some days gave a promise of much success, but alas! the cut-worm and the grub soon made their appearance, and committed such havock among my little nurslings, as to cause me much anxiety. On the 23d of April I replanted the missing places (which were so numerous as to give the land an appearance of nakedness) and hoped that my cares would soon be at an end. No sooner had the grain burst its sear-

ments and showed itself, than the enemy again invaded my little territory, and left marks of destruction not to be mistaken. Nothing daunted by my disasters, I again replanted, and thanks to a hot sun and warm temperature, the grain soon forced itself out of the ground, and was now allowed to go on its way rejoicing. The first planted corn had now attained considerable growth, and it became apparent, that although my late planting was out of the way of the worm, it could not escape from its neighbors, who overtopped and overshadowed it. For this difficulty there was no remedy, and therefore submission was no virtue. When about 18 inches high, the plough was put in, the alley thoroughly broken up and the earth thrown from the corn; in a few days the plough again passed through, and laid the earth to the bed. After the lapse of a week, the hoes were put in and gave the corn a mould or dressing. The plant was now growing very fast; indeed its progress was visible from day to day; the leaves had extended from bed to bed, and were so numerous as to render it impossible for the plough to be used again. But there was little necessity for its use; the shade produced by the thick foliage, had put a stop to the growth of grass. A careful lad was directed to go in and haul up lightly where he could do so, but it seemed to me that if he did any thing, it was mischief, as he broke off many of the leaves, and in one or two instances snapped the stalk. I had not however, much to complain of on this score, for the corn grew luxuriantly; it was attaining a great height and the stalk was of great size. In the midst of all these pleasant anticipations, a severe gust passed over my cherished acre and prostrated a dozen or two of my best stalks; but I have always esteemed complainings unwise, and lamentations of things that could not be remedied as unphilosophical, so I will say no more of my troubles, but go forward as speedily as possible to the end of the journey we are travelling. The corn now eared out, and the crop whether good or bad was made; the ears were large, and on some stalks two and three ears good and full were to be found. Towards the close of October, (on the 25th I believe) the corn was harvested in my presence and in the presence of a friend, and yielded  $116\frac{1}{2}$  bushels of clear well picked cobb corn, in good condition and of the first

quality. In November (about the 5th) it was shelled and measured and yielded  $57\frac{1}{2}$  bushels of corn, free of dirt, trash &c., &c. This product, Mr. Editor, is not remarkable, and in corn countries would not be worth mentioning, but in a section where corn has hitherto not been made beyond the wants of the operatives, it is agreeable to find that the crops can be almost indefinitely increased by additional manuring. This acre is in the midst of 16 acres and therefore had no particular advantage from a free circulation of air; less work we could not well have given it; the average of the 15 adjoining acres, which was well manured also, but not to the same extent, was a fraction over 20 bushels: to nothing therefore but the increased manure, and perhaps the mode of planting, can we attribute the greater turn-out of corn. As regards working of corn, my opinions are somewhat peculiar; I am sure that corn is too much worked, and that half of the labor we usually bestow will give greater results provided we apply it at the proper periods. We expend our efforts on corn after it is up and growing; now I have little doubt but that the proper time to do the work is before the seed goes into the ground. The land should be deeply and thoroughly broken up early in the spring, and then if it is well manured, it will require but little work after the corn is up. I ought to cease here, Mr. Editor, but I have one word more to say and I am done. To the President of the Agricultural Society, (a gentleman of whose friendship I feel proud) we are all very much indebted for a short article on corn planting, contained in one of your recent numbers; the experience of that gentleman is valuable, and needs no support, but it is gratifying to be able to confirm it. Corn roots in our climate cannot be cut up with impunity, whatever may be the fact in other sections; the heat of the sun operates more severely upon it and it is sure to wither and languish. But the object I had in view was to say, that corn is certainly injured by planting peas at the same time with it: not so much by abstracting nourishment from it, although this must have some effect, but from the hauling up which is necessary to make the pea crop. The period at which we haul up peas, is the moment, if I may so say, at which the corn is making its last and great effort to perfect the fruit: it is at this critical time, that we take the dirt from its roots, and either cut them off or expose them to the scorch-

ing rays of an August sun. Would any rice-planter dry his rice when it was shooting and filling, and give it a deep hoeing. If one would be wrong, the other cannot be right. Pardon me for this digression, and for trespassing so much upon your time and patience.

Z.

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For the Southern Agriculturist.

### EXPERIMENTS ON THE CULTURE OF CORN.

BY JESSEE COWARD,

AT QUINBY PLANTATION, EASTERN BRANCH OF COPPER RIVER.

The land lies near the old settlement—has been planted for a very long term of years, and is “as fine a bed of nut grass as the eye of man ever beheld.”

Two acres, (planters' measure) were listed in December, 1841, 6 ox-cart loads of stable manure having been first spread on the list. They remained so till 5th March, 1842, when they were made up in beds 5 feet from centre to centre, and 3 feet broad when finished—were planted on the 10th, two rows to each bed, “the rows 3 feet apart in a zig zag form.” 4 ox cart loads of barn yard manure to each acre were put in the holes—1 acre planted with flint corn, the other with Collin's, 4 to 5 grains in each hole.

When the corn was about 3 inches high, it was hoed, 3 hands to the acre, and thinned out to one stalk in a hole. It received two workings afterwards, (dates not recollected) 2 hands to  $\frac{1}{2}$  acre. When about 4 feet high, 3 ox cart loads of hog pen manure to each acre were spread on the beds, and hoed in as the corn was worked. It was harvested on 22d August. The Collin's corn yielded 52 $\frac{3}{4}$  bushels, weighing 56 lbs., to the shelled bushel—the flint, 49 $\frac{1}{4}$  bushels, weighing 56 $\frac{1}{2}$  lbs.

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For the Southern Agriculturist.

### ON THE CULTURE OF CORN.

*Mr. Editor,*—As the published results of experiments in cultivating the soil, may tend to the improvement of Agriculture, by suggesting to those engaged in like pursuits, untried methods of cultivation, I am induced therefore to make known the treatment

and produce of 3 acres of land on the farm of the Agricultural Society near the city. The soil is a grey sandy loam, based on white sand—exceedingly unproductive in its original state, not yielding more than 8 or 9 bushels of Indian corn to the acre. This field has been continuously cultivated for 9 or 10 years in oats, rye and the grasses, every crop having from 20 to 30 horse-cart loads of manure applied to it. In September, 1841, a part of this field had 30 cart loads spread broad cast and ploughed in with a two horse plough, the ground harrowed and rolled: it was then sowed in rye at the rate of one bushel to the acre. In February the remainder of the ground was treated in like manner, and sowed in oats. In the early part of the month of April, the rye was cut down in a green state, and forty-one horse-cart loads of animal manure, (most of it in a fresh state) were spread evenly over the ground, and a two horse plough turned in the same together with the stubble, about five inches deep: the harrow levelled the earth, which had been thrown up by the plough in lands of 42 feet, leaving a deep water furrow between each bed, and the whole field well and deeply drained. One quarter of an acre was planted in corn on the level surface—the rows or lines laid off five feet apart, and the stalks standing one every 30 inches—the produce at the rate of 42 bushels per acre. Another quarter stood 2 stalks near together, every 4 feet, produce 50 bushels per acre. A third experiment was drilled in double rows a foot apart, and a space of 4 feet left between the double rows—the corn left to stand about a foot apart each way on the double rows, but the cut-worm and high winds destroyed much of it, for at the time of harvest this piece averaged but 121 stalks to the double row of 105 feet in length. The produce at the rate of 94 bushels to the acre. About the 25th of April, the remaining half of this field was prepared in the same manner as the first part, and the corn left to stand, some in single stalks 2 feet apart, another portion 2 stalks every 3 feet, another 2 stalks every 4 feet,—the produce 33, 46 and 37 bushels per acre.

The manner of tillage, was thus—as soon as grass appeared, the cultivator was passed through the field. When the corn advanced to the height of about 6 inches, a small bar-share plough was made to cut away the earth as near to the plant as possible without disturb-

ing it, say from 3 to 4 inches; immediately after, the plough returned and filled the furrow again. The cultivator passed through the field twice afterwards at an interval of 10 or 12 days. The hoe followed at each time to remove any grass between the narrow rows. When the plants had advanced to the height of about 3 feet, 2 bushels of half rotted stable manure were thrown over the double drills, and a double mould-board plough went through the field, keeping equi-distant from the corn, leaving a good water furrow as a means of better drainage. The earth thrown up was drawn by the hoes to meet around the corn.

The seed was the true Carolina flint, selected at harvest time from stalks bearing 2 to 3 good ears, which practice has been kept up for 16 years. I believe that the previous preparation of the land was a material cause of the great production, and likewise the selection of seed—more than one half of the stalks bore 2 good ears, and a few 3 ears and none were barren. The past season was unfavorable to the saving of fodder generally, but the thick planting fired less than the thin. The field was skirted on the east, north and west by a close hedge fully 8 feet high, which induces the belief that this mode of planting would succeed on a larger scale.

JOSEPH F. O'HEAR.

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Translated for the Southern Agriculturist.

PISE.

IN many of the northern department of France, particularly in Champagne, the name of Pisé is often improperly given to a kind of unburnt brick or artificial stone, made with the mud of streets or roads, with which is, (almost always) incorporated a little straw; this mixture is then pressed in wooden moulds, then taken out to be dried in the sun or shade. This pretended pisé is used for want of other materials suitable for building, and by this means are obtained the most miserable constructions possible, incapable of supporting the lightest roof, which consequently require a frame work to be raised from the foundation to the roof, in order to support it. Besides, the repairs to this kind of building, renders it really the most expensive of all; for this kind of brick soon cracks, warps, separates from the wooden frame, and soon falls upon the

slightest shock either outside or within the house. In other countries further South, as Artois and Flanders, where stone buildings are very expensive, another kind of pisé or unburnt brick is used : although made in the same way, they are very good, on account of the quality of the earth which is chalky and compact, and which even without straw does not crack in the sun. These bricks cement so well with mortar, that when an old wall or chimney is pulled down, it is not uncommon to see it broken into only 3 or 4 pieces by its fall. These buildings can therefore be solid and economical, for the only remarkable expense is in the foundations, which ought necessarily to be rubble work, brick or tabbey, raised at least one foot above the earth around. As to the true pisé, which we derive from the Romans, it is still much used at Lyons, and in some of the southern departments, also in Italy, Spain, &c. It differs essentially from the bricks or artificial stones that have just been described. It also, however, is only an unburnt earth, not tempered, but slightly moistened, rendered very fine, then squeezed and well beaten in large or small moulds, or between two boards strongly fastened to each other, by which means can be constructed enclosures, walls and houses of several stories of no greater thickness than is common in masonry. "It would appear 'almost incredible,'" says Mr. Rosier, "if experience did not support the assertion, that walls of earth could last many centuries, 'provided they are well plastered with mortar, protected from the rain, and secured against moisture by foundations in masonry 'raised above the level of the earth.'"

As to the kind of earth, there are very few which are not suitable for pisé, except pure clay, because it cracks in drying, and pure sand, because it admits of no adhesion. Where there is a choice, the preference is to be given to that which is stiff, that which sets or clods easiest ; which is known by its retaining the shape given to it by the hand, without sticking to the fingers, such generally is the untried earth of gardens. Stiff earth mixed with gravel, provided it is not too coarse, is employed with equal success ; it ought also to contain no admixture of roots or manures, which by rotting would allow the air to penetrate and injure the wall. As to the moisture that this earth ought to have, it ought to be about the same that it usually has in a natural state, at 2 or 3 feet below the surface. When it is well pulverized, it is put into the moulds or

between two boards, and well rammed or beaten with rammers, which will reduce its volume and allow more earth to be added, which must be beaten in the same manner, until the moulds or boards are exactly filled.

Previously to adding more earth, the last layer ought to be scratched with a sharp iron, or small mattock, in order that the two layers may join exactly, and form but one body. At Lyons, where this style of building is very common, they have large cases or boxes, without bottoms, which are supported by pieces of boards laid across the walls; the pieces are moveable, and can be placed in succession, as they are filled with pisé, the short boards are withdrawn from their original places, and carried further on to support them again, and so on in succession. In the adjustment of one round to another, mark or scratch the work as above, or put a little mortar to serve as a cement. Also, from one story to another, it is necessary to put some bits of good board, flat and in different positions at the corners, to prevent the walls from separating. The partitions are done in the same way. Spaces are always kept open for windows and doors, by placing the frames for them beforehand, or they are set in brick or stone, where either is convenient.

By either method of making the pisé, in a little time, and at small expense, can be constructed, houses and other rural buildings, covering them like brick or stone houses. Both these methods have, however, an essential defect, which is, that the ramming of the earth, and consequently the hardness and solidity of the pisé, vary from one box to another and from morning to afternoon, this solidity depends, in fact, upon the expertness and strength of the rammers, which are not always at the same degree. In the morning for instance, the work is always well rammed, but towards night, fatigue necessarily causes some diminution: hence, a sort of imperfection in the work. Again, as the work must be done in the open air, (which suits warm countries very well, where it rains only at long intervals) it is often exposed to rains in our mild climate (France) and rain is a great obstacle which occasions almost always, a good deal of imperfection in the making of pisé. It was for this reason, that Cointereau, architect from the city of Lyons, having settled at Paris, towards the end of his career, conceived the idea of making his pisé before hand under sheds, in

small moulds, where it was easier to press them always equally, and to allow them to dry slowly beforehand, sheltered from the rains and other vicissitudes of the seasons; which produced in the end, true bricks or artificial stones of great hardness, and consequently excellent materials for building. It must be understood that in working them, as in using hewn stone, a little thin mortar or quick lime will be required. In some places, stiff earth makes an excellent mortar for this kind of pisé. The size and shape of the moulds can be varied in such a way as to answer in all cases and for all purposes. In this way can be made beforehand, not only artificial stone, ready cut for the corners and angles of windows, and doors, but also for pilasters, columns, circular, elliptic, and gothic. arches, &c., for experience has proved that with the exception of the key, which can be of wood as well as hewn stone, pisé can be used for the vaults of cellars provided it is protected from moisture. However, for the brick and even for every other purpose, it would be as well to prepare moulds of only moderate dimensions so that each brick shall not weigh more than 25 or 30 lbs., then one man can easily handle and place them: otherwise it will be necessary to employ more men, more time and tools which necessarily wear off the corners of these stones or bricks and injure them. It will be seen in the sequel how economical is this style of building, even in countries where wood, stone and lime are most abundant. It is the true rural construction, cool in summer, warm in winter, and is besides susceptible, at a small expence, of the handsomest decorations by means of fresco paintings, which are easily put on, and resist the vicissitudes of the seasons; it will be seen also, that they can be of very great solidity

The rich proprietors and merchants of Lyons, who have delightful villas in the environs of this city, build them exclusively of pisé, plastered over and painted in fresco in the best taste, and at a very moderate expense.

This plastering ought not to be put on until the pisé is completely dry, unless it be done in quick lime, or lime very freshly slaked.

A pisé house has the double advantage of being soon finished and habitable, and of costing much less than another. It also furnishes, when it is pulled down, an excellent manure for moist soils. I repeat, it is the true rural and rustic building for the rich

as well as for the poor, and that can be adopted in every country. It can also last centuries if it is well done. Not only many modern authors, and among many others Rosier, affirm all these advantages, but all the ancients have proved it, and Pliny the younger mentions that Hannibal had built in Spain, lanterns and towers upon the summits of mountains, which still were in existence in his day; which supposes at least three hundred years preservation. There is neither cement nor mortar, says he, which is harder than this earth, which resists rain, wind and fire. Cadet de Vaux, mentions that the younger Bailly, a French Physician who went into Spain to study the yellow fever, visited some years since the ruins of Jagautum, dismantled more than two thousand years since, and could not detach a small sample of the pisé of which they were originally formed, without the assistance of a chisel and mallet; and in our days the siege of Lyons has proved the solidity of this species of construction, in resisting the efforts of the most formidable artillery: in truth the balls passed easily through the walls of pisé, but did not shake them, whilst it upset easily and with a great crash those walls in round or hewn stone. At any rate, if, as it has been said in the beginning, it is desired like Cointereau, to make pisé beforehand under sheds, in small moulds, as well for greater facility as to secure greater hardness and a more equal compression, to avoid the irregularities of the seasons, &c., this is what we have first to consider. Experience has generally proved that fine earth being pressed to half its volume, as is necessary for greater solidity, weighs always from 120 to 160 lbs. the cubic foot, according to the nature of the elements which it contains; now a cubic foot contains 1,728 cubic inches, thus an artificial stone or brick of pisé, the fourth of a cubic foot, will weigh from 30 to 40 lbs., which would still be a great deal to be handled easily by one person, as it would often be necessary. Besides, experience has equally proved, that a person could do more work with small hewn stones, than with too large in a given time; wherefore it would be well to reduce ours to the fifth or even the sixth of the cubic foot; they will still weigh 20 to 25 lbs. Now, if we are satisfied with a wall 18 inches thick, which is suitable for many circumstances, we can content ourselves with artificial stones of 6 inches wide, 4 inches thick, and 12 inches long, making 288 cubic

inches, or the 1-6 of a cubic foot; in short, one of these stones lengthwise, and the other across, and so on alternately in the construction of the wall, would enable us to keep exactly and always this thickness of 18 inches, and if we wished to extend this thickness to two feet or reduce it to one, as partition walls would probably require, nothing would be easier, since in the first case it would be enough to put two stones end to end, and in the second, it would only be necessary to put them one after the other in order to obtain the desired thickness. In any other case, it would be equally easy to arrange the lengths, breadths and thickness of this kind of stone. Thus a stone 10 inches long, could be only 5 inches wide, and 5 inches thick to make up, and if it was 14 inches by 7, 3 inches thickness would be enough in order not to exceed too much the prescribed weight of 20 to 25 lbs. For partition walls, small pisé stones of 4 inches thickness, by such length and breadth as would suit. Now that the size and weight of our pisé stones are settled, we will go to work in the following way, viz: we will first make strong moulds, have the prescribed lengths and breadths, in the clear, and a height at least double the thickness the stones are to have; these moulds ought to be of good wood, well made and well morticed in the same way as moulds for bricks. They must be filled with suitable fine earth, and struck off smooth without pressing it even with the upper surface of the mould. Next, press the earth tightly with the hand, then with a block fitting exactly the inside of the mould, compress it to half its size either by means of a lever press, mallet or other process, that may be convenient. Such are the means pointed out by Cointereaux, which are very easy to be understood and executed. What is more difficult is, after having pressed the block down sufficiently to reduce the brick of pisé to the desired thickness, to take out the brick easily, as it often sticks very hard in consequence of the great compression. In order to accomplish this, recourse must be had to all the means employed in brick-yards in similar cases, sand or earth very fine or very dry must be used. Before putting the earth into the moulds, the inside of the mould, the table upon which it is pressed, and the bottom of the block, must be well sprinkled with the dry sand, &c., the brick will then come out easily, by bearing upon the block and raising the mould, and provided that the mould is a very little

larger and longer below. When the mould is taken off, the brick must be taken in both hands with care, and put upon a board to dry, as is done with bricks. If after having employed all the means mentioned above, there should still be difficulty in getting the brick out of the mould, it will be necessary to heat the mould and grease the inside, and there will be no further trouble.

At the end of a few days, care must be taken to turn these bricks upon their side, and upon the other sides in succession, in order that the drying may be complete. When they are very hard or very dry, they can be piled carefully against the wall, to remain until wanted for use; then it will be the work of a few days only to raise the intended buildings, and nothing will remain but to cover them.

It must be understood that for the angles of the windows and doors, suitable moulds and bricks of pisé must be prepared, and if need be, they may be cut with the saw, like true hewn stones.

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For the Southern Agriculturist.

#### PREPARATION OF SEA-ISLAND COTTON.

The following letters on the preparation of Sea-Island Cotton, have been communicated for publication in Southern Agriculturist, by the Hon. WHITEMARSH B. SEABROOK, President of the State Agricultural Society—we understand his Address before the Society will be published hereafter.

Charleston, November 11th, 1842.

*Hon. Whitmarsh B. Seabrook, Edisto Island,*

DEAR SIR,—The samples of Cotton referred to in Mr. Houldsworth's letter, were received some few days since, and we have placed them on board the Seabrook, under the care of Mr. W. G. Baynard, to be delivered to you.

We enclose you herewith the answers of our friend in France, Mr. E. Masquileir, of Lille, to the questions propounded in your letter to us, a copy of which we sent to him.

You cannot fail to perceive that his answers and opinions are identical to those of Mr. Houldsworth.

We are dear sir, very respectfully,

Your Obt. Servts.,

GOURDIN, MATTHEISSEN & CO.

*Answers to interrogatories propounded by the Hon. W. B. Seabrook, in relation to the preparation of fine Sea-Island Cotton.*

1. A preparation less ropy is required.
2. Ropiness is a great defect, an open *plat* (flat) cotton is much more easily carded, and is therefore preferable.
3. The exposure of cotton to the sun is highly disadvantageous, it dries the vegetable oil, from whence its bone and quality.
4. The first requisites for quality, is the combination of fineness and strength. I am inclined to attach less importance to length of staple, although this is also very essential.
5. The defects here alluded to are very serious when carried to excess, there is an immediate depreciation from 10 to 20 per cent.
6. Consult the Spinners' Manual.
7. The Spinners, occasionally to produce a certain number, will mix a fine with a coarse quality, but this is always done with no other object than to use up his stock, instead of purchasing cotton of a quality exactly suited to the number, which he wishes to spin—Such cotton would be decidedly preferable, all mixtures being pernicious—Uplands and Sea-Islands are never mixed.
8. The Spinner has no other means of getting rid of neps than by the use of excellent cards, but in carding to destroy the neps he injures the staple and takes away from the value of the cotton.

St. Helenaville, Sept. 20th, 1842.

*Dear Sir,*—Your letter was received some time ago, and should have been answered before. You are desirous of obtaining information concerning the best mode of preparing Sea-Island Cotton for market. I can only give you my practice and experience. The many and various subjects which your questions touch, render it difficult to afford you more than an imperfect analysis of my views upon each, and shall be happy if these can be of any advantage to you in your laudable undertaking.

I require the Cotton to be exposed as much as possible to the sun during the day it is gathered; and in nothing am I more particular than to have each day's picking assorted on the following mornings. When the gathering is done in fair weather, I do not re-assort afterwards, but before it goes to the gin it is passed through the *Patent Whipper*, with two hands to overhaul for six ginners. Should I have occasion to re-assort, the daily task varies

according to the manner in which the Cotton is gathered—from 70 to 150 lbs. After the day it is gathered, it is never exposed to the sun unless it has been wet with rain, and then it is removed as soon as the moisture from the rain is dissipated. The rules which govern me in ascertaining that it is sufficiently dry, is simply this, when pressing the *seed* with the fingers and they do not yield to the pressure, I put it away. When the drying process is over, it is placed in bulk with no other pressure than it will receive from its own weight. I use the Patent Whipper, invented I think by Berney. When the weather is fair, I require 25 lbs. from each ginner, and am satisfied with 20 lbs. per day in damp weather: my moaters do me from 30 to 40 lbs. according to the fairness of the ginning. I have never used the three clamped gin, and therefore cannot say which I would prefer. In packing, I use a wooden pestle having the shape of a wedge, with the corners rounded off smoothly. After moating, before it goes to the bag, I have it searched over by two hands, and then thrown by them into the bag in thin layers, without pressure of any kind, further than it receives after in the bag. For the last two years I have not wet the bag at all, but previous to that time it was my custom to *wet before* it was hung up and never after. The average weight of my bags I should say was about three hundred and thirty-five pounds. Your last and important question comes now to be answered.

Avoid packing the seed cotton too closely in bulk; the shaking and tossing it about, in assorting, and the whipping it too much, which is almost sure to happen, when the common Whipper is used, unless great care is observed, and I think that lumpy and stringy appearance which is so often complained of, will in a great measure be obviated. I have endeavored to be as explicit and minute as these few pages will permit me, and return you my thanks for the compliment you paid, in supposing that my opinion would exert an influence in the agricultural community. We all differ more or less on minor points, but I presume that the testimony of all experienced planters must corroborate, as to the fundamental rules that govern in preparing our crops for market. With sentiments of the greatest respect, I remain, Your obedient servant,

JOSEPH J. POPE, Sen.

HON. WHITEMARSH B. SEABROOK,

*President State Agricultural Society of So. Ca.*

Edingsville, July 1842.

*Dear Sir,*—Your esteemed favor of the 6th July, requesting information on the preparation of our Sea-Island Cotton has been received, and I take much pleasure in giving you all the information which my little experience on that subject will warrant.

1st. In harvest season, do the negroes, whilst engaged in work, expose their pickings to the sun? Yes, for the simple reason, that we would not have sufficient room in the house to dry, when the Cotton began to accumulate too fast.

2d. Is the gathering of each day assorted on the following morning? Yes, and also when each picker empties his bag whilst picking.

3d. Is the Cotton re-assorted before it goes to the gins? Yes, from 50 to 80 lbs. to the hand.

4th. Do you dry your Cotton in the shade? Entirely in the shade, except when wet with rain, in that case in the sun. We consider it dry enough when the seed will crack on pressure.

5th. When the desiccative process is over, we pack moderately close, but from more heaps than one, in order, should any be heated, it may not extend to the whole.

6th. I do not use the Whipper except for stained cotton, it has a tendency to tangle it.

7th. I give to a ginner 38 lbs. clear of the bag, and the same to a moater.

8th. I prefer a two clamped-gin, because it does not require the roller to be so true, and I think winds Cotton less, and requires less labor to turn it; I have had both.

9th. I use a wooden pestle not exactly round, but more in the form of a wedge.

10th. The Cotton is thrown in small parcels, as it comes from the moater and overhauler, into the bag, without being compressed, and what is ginned one day, is cleaned and packed the next, by which means it gets less dried and not so apt to collect dust.

11th. I wet the bag during the process of packing, because it will require less hard pounding. I always line my bag with white homespun. My bags average from 350 to 400 lbs.

12. What are the causes of the lumpy and stringy appearance of Cotton, and how may they be prevented? I think it proceeds from the circumstance of being badly gathered in the field, and too much handled after being brought into the house before it is sufficiently dry. You will perceive that Cotton, when in a moist state, is more apt to tangle; and the negroes in overhauling it in the morning especially on the crib, are more likely to injure it at that time than after it is dried. I will observe that our rainy-pickings are put in one heap.

Thus, my dear sir, have I given you in a few words, my process of preparing Cotton, should it be of any advantage to the public, it will afford me secret satisfaction. Believe me,

Yours truly,  
EPHRAIM M. SEABROOK.

James Island, July, 1842.

DEAR SIR,—I received your communication, respecting a machine in my use, to which much agency seems to be attached, in the preparation of my last year's crop, having (according to your note) been flatteringly called to your attention, by the approbation of one of our native and most prominent cotton buyers.

I have, sir, to render as my apology for this delay in my answer, personal ill health and family affliction; and however reluctant I may be, (from conscious inability) to intrude my opinions on the public, yet when called upon by one like yourself, who has never shrunk from the claims of duty, but merged all selfish considerations in the zeal which you have exhibited for the political happiness of the South, and for the improvement of the rude and elementary condition under which the agriculture of this section of the country still continues to struggle; I feel that I would be recreant to the obligations of society, were I not modestly to communicate what little information I may possess on the subject in question; and here let me observe, that I would not be doing justice to the philosophic spirit in which your inquiry is made, were I to confine my answer to the mere description of the machine alluded to; as the result Mr. Gourdin speaks of, is not to be attributed wholly to its agency, but depends upon a long and persevering series of operations, commencing in the first step of harvesting, and

continuing through the whole course of preparation to the last act of packing.

Putting aside the length and fineness of the staple, as not embraced in this inquiry, I deem it all important, to obtain a strong and uniform fibre, by selecting the most perfectly matured portion of the crop before it is taken from the field.

It would seem obvious, that if all descriptions of Cotton, from the confused and doted mass of tangled wool (which forms a large proportion of the production of the sickly plants now in use,) were once mingled together by the short-sighted and improvident husbandman, it would be impossible to separate them again, without so much handling on the part of the operator, as in my opinion would be calculated rather to aggravate than remedy the evil.

Cotton, like every other thing of life, is obedient to the laws of its nature : and when untrammelled by the caprice of man, will always propagate its kind from the most healthy and perfect of the species. The diseased and the degenerate portions of the plants, perishing in their efforts to sustain life, and leaving the task of renovating nature, in the coming generation, to the more hardy and robust, thus guaranteeing to each successive generation, a healthful inheritance.

Not so when the taste or whim of man interferes with the regular course of nature—an artificial state of existence, immediately springs up; requiring constant and untiring vigilance, to maintain the variety or peculiarity, we have called into existence. The thousand spurious selections, (which now distract the judgment of planters) emanating from one simple and uniform plant, serves to illustrate my view.

We have ('tis true) gained (in some partial lots) length and firmness; but have decidedly lost in strength and uniformity; and I am inclined to believe that Cotton, selected with regard to this latter quality, (taking into consideration its greater facility of preparation) will often out-spin in length of thread (when worked up in the spinning-jennys of Manchester) many finer but more uneven samples, that have been prepared without regard to the classification here insisted on.

The diseased and artificial character of the plant, now cultivated has decidedly increased the difficulty of preparation; and has

therefore rendered it necessary for the planter (while he pays all due attention to the creditable object of improving the length and fineness of the staple) to use every exertion in his power to counteract the tendency of this delicate nursling, to disease; as it always results in an irregular and imperfect fibre.

This I propose to do (in a great measure) by the following process. As soon as the earlier and more imperfect pods are opened, and have been collected from the field, I keep a few confidential servants constantly employed ahead of my main gang, picking from such plants as manifest the most perfect maturity, exhibiting no evidence of casting or disease of any kind; and from these servants I expect no regular task, but only rely on their integrity.

From such plants I have (and it is obvious I must) collect Cotton both superior in quality and quantity, covering its seed with a more perfect and regular fibre, and thus greatly facilitating the task of preparation.

Having made this provision for another year, the main force that picks indiscriminately, are directed to sort carefully in the field, every time they empty their picking bags into their sheets; and this is not only enjoined, but actually enforced; while a still more rigid system of sorting is carried out, the following morning on the scaffold, while the dew is evaporating from the field.

By this means, it would seem, that I must pack off in bulk Cotton, so perfect and well matured (in the first class) as to give very little trouble in preparing it for the gin; but I hold the process of sorting to be so important in saving me the necessity of handling my cottons, after the seed has been separated from the wool, that I deem it necessary to re-assort my whole crop at the rate of 25 or 30 lbs. to the hand per day; and here let me observe, that the greatest difference can be perceived by the practised eye, between the mode of preparation of two separate operators, calling for the most watchful vigilance on the part of the superintendant; for it is at this stage, that the evil of winding and tangling the fibre (if not begun) is at least most observable; and immediately (if ever) to be remedied.

The operator that handles his Cotton properly, will leave each seed with its appropriate fibre, (comparatively) disunited with the surrounding mass; and giving to the wool a raised and fuzzy ap-

pearance, will the better prepare the Cotton to present the extremity of its innumerable little threads to the action of the rollers.

The Cotton in this open state, (it must readily be seen) will more clearly present to the eye of the operator, all such extraneous substances, as are capable of being removed by the human hand; but there is still an immense mass of foreign matter, so interwoven with the fibre, as to elude both the eye and the hand, calling for the aid of machinery: and it is at this stage, that the machine I use becomes an important agent in the process.

It would be doing more than the old Birnie's Whipper ever did, were it not only to pass through its evolutions, the Cotton thus well prepared, without impairing its condition, while at the same time, it thoroughly sifts from the mass all foreign matter; but I claim that it will (in a measure) remedy much of the evils of the previous bad preparation, as it opens and separates such portions of the Cotton as have been but moderately tangled; which if left to pass the gin, in that condition, will increase the evil at every step.

Tangled Cotton presents to the action of the rollers, a very unequal resistance, in the act of separating the wool from the seed; and the staple, that (perhaps) was originally uniform in length, is thus rendered unequal; as every observing planter must have noticed in the selection of his seeds, that the most uneven staples, are the most subject to be tangled.

The Cotton being thus carefully sorted into its separate qualities, well cleansed, and well opened, it will present to the action of the rollers no doted or imperfect samples, they having been discarded; and of course no false seed can pass through, to increase the necessity of extra handling on the part of the moater. Having been well cleansed, there can be very little call on that score for further interference; and what little may be left to the moater under any circumstances, can surely be better accomplished upon well opened Cotton, than upon a previously confused and tangled mass of wool.

It must thus be perceived, that I leave but very little for my moaters to accomplish. They indeed simply act, as overhaulers; and the greatest care is enjoined upon them, even in the act of transporting the Cotton from one position to another; as every move

Cotton undergoes after its separation from the seed, is calculated to endanger the regularity of its thread.

I thus hasten, (as soon as possible) to commit it to the bag; and this I do in large quantities, packing it at first very lightly, while the resistance is against the unyielding substance of the bag. I afterwards use more force, as the resistance is then against the more elastic substance of the Cotton beneath.

The task of packing I accomplish (very reluctantly) with the pestle in common use; as I am satisfied it does much injury to the Cotton. I intend at some future period, (suited to my convenience) to try the use of the packing screw, as it seems to meet the desideratum of keeping the Cotton as immovable as possible; while in the present process, the packer goes tramping round the bag, like an ox in a clay hole, as if the object was, the more thoroughly to intermix the mass, occasionally puncturing and fracturing the fibre with his long and (comparatively) pointed lance.

Having thus explained the process, through which I carry my Cotton, and which I think is necessary to produce the result Mr. Gourdin seems pleased with; it now remains for me to describe the difference between the machine I use and the old Birnie's Whipper.

It consists simply in boarding over the spokes of the Birnie's Whipper, so as to present a smooth and solid surface to the action of the Cotton. The boards must be attached to that side of the spokes that offer the resistance of the Cotton in its evolutions. It thus forms two sets of fans, which in their evolutions, generate a powerful stream of air, the best agent for separating dust from the Cotton, while it preserves the integrity of the fibre. It will of course be found unnecessary on the part of any one making a new machine, to have the numerous spokes now inserted into the axels of the Birnie's Whipper, as a more simple and efficient fixture could be devised, for the support of the boarded surface required.

I remain, yours respectfully,

THOMAS LEGARE, Jun.

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## ON THE MANNER OF APPLYING MANURES.

*Mr. Editor,*—I am aware that the time of treating the subject of manures practically has passed, but the time of speaking theoretically will ever be present. Not that I would intimate that they must be treated in theory only, for I think no person is competent to speak or write on this subject without some practical knowledge of it, but that the application of manures can be much better understood by a knowledge of the theory than without it, as this shows its component parts and their manner of operation.

One of the principal points now seems to be whether manure can be applied most successfully to soil, by ploughing in, or by harrowing in on the top. I would state in the outset, that I am in favor of ploughing it in, for two reasons, the first of which is, that my own experience and that of the principal part of the farmers around me, has confirmed the opinion; and secondly, that what knowledge I have of the constitution and changes of manure, favor the same opinion. Not that I would say that my way is the best, or that I would condemn men for not believing as I do, for every one has a right to think as he pleases, but I think free discussion on this subject will be productive of no harm.

In order to understand this subject aright one must be acquainted with the constitution of manures. This has been ably investigated by some of the greatest chemists that have ever lived, (such as Davy and Chaptal,) and they did not deem it beneath their notice to inquire into the contents of the farmer's grand restorative of nature. And as long as the science of agriculture shall exist, the names of Davy and Chaptal will be handed down to future generations as being the authors, in God's hand, of the blessings which they now enjoy.

But to return to the subject. The investigations of these able men showed that manure consists principally of woody fibres, soluble salts, and water, and that during the changes which it undergoes by fermentation, &c., there are formed carbonic acid, ammonia, carburetted hydrogen, and water. The carbonic acid, and carburetted hydrogen, are not known to be of much importance to vegetation, and are formed in less quantities than either of the other three, all of which are of great importance. The carbonic acid is absorbed by the leaves and enters the roots in a state of solution in the water. The ammonia which exists in the state of a gas, is of no importance, it is supposed, in a pure state, but unites with some of the salts, more particularly with some of the insoluble salts, and forms soluble salts, as with sulphate of lime, or plaster of paris, which is insoluble, and forms sulphate of ammonia, which is soluble. I have been thus particular in enumerating the products of the decomposition of the manure, to prepare for the application to practical purposes.

We will now examine the effects of manure as buried in the soil by ploughing, or as buried by harrowing.

First, suppose it harrowed in; that is, the greater part of it covered with soil sufficient to keep the sun from drying it up. It is a matter of fact that all the manure is not covered up by the harrow, but that a small portion of it remains on the top, and is in a measure lost. One of the strongest arguments in favor of applying it to the surface is, that the carbonic acid which is generated, being nearly twice as heavy as common air, if placed under the surface at any distance, will soon fall below the reach of plants. To the superficial observer, this at first might seem to have considerable weight, but if we look at it candidly, I think we shall see that there is not much advantage gained in placing it near the surface, with one exception; that is in argillaceous soils. There is one thing to be kept distinctly in view, and that is, that water is continually rising from below, as the evaporation of the surface is very fast in warm and dry weather, of which there is much while the manure is in action. When the carbonic acid is generated near the surface, the only forces to cause its ascension are the plough, the vapor of the water and its own abundance. But when generated some six or eight inches below, the rising of the water would tend to force it up, and at the same time would condense a considerable quantity of it, which would rise with it and the rest be absorbed by the roots. However, on the whole, I think it rather doubtful whether much of the gas formed beneath the surface, ever reaches the leaves, combustion, respiration, and other causes producing it in sufficient quantities for the food of plants.

The ammonia, which is but half as heavy as the atmosphere, would, if formed near the surface of the soil, and as the greater part of the roots run to considerable depth, they would be deprived of much food which they would otherwise obtain, were the manure lower. This last remark would apply to dry or moderately dry seasons, as were there much rain the juices would be washed down; and this accords with experience. Last season, which was a dry one with us, my land on which the manure was ploughed in, raised much better potatoes than the same kind of land on which the manure was both harrowed in and put in the hill.

But I fear that I am encroaching on the reader's patience, and therefore will be short in speaking of ploughing in manure; the manure is not all turned under the depth of the furrow, nor is any of it on the top of the earth.

It has already been shown that there is nothing more lost by ploughing in as it respects the formation of the carbonic acid. There is, I think a great advantage in the retention of the ammonia, for the gas has a stronger affinity for the constituent principles of many substances, than they have for themselves, and combines with insoluble and forms soluble matters. There are many more good effects from covered manure which may be inferred from the foregoing principles, but I have already taken up too much room and will say no more at present. Yours truly, DROSENA.

Attleborough, June 17, 1842.

Farmer's Journal.

## LIME, AND THE MODE OF APPLYING IT.

The practice inculcated in the following, which we clip from the *American Farmer*, has novelty at least, to recommend it : we trust our friends will give it the attention it deserves. That lime is one of the most valuable farm manures, has been long settled : the best mode of applying it, is not well understood.—*Farmer's Cabinet*.

Mr. Raymond Baker communicated to the Royal Agricultural Society some observations on the use and abuse of lime as a dressing for land, by Mr. William Henry Fisher, at 18 Conduit-street, London. The author's great object is to impress upon farmers the importance of using quick lime, and not lime which once had been quick, but by decay in use and exposure to the atmosphere has become effete, and has absorbed from the air the carbonic acid, which changes it again to the carbonate of lime it was before burning. He considers that many thousands of pounds are annually thrown away by agriculturists, from want of a proper knowledge of this simple fact; and he recommends them to use their lime in the fresh burnt state, by carting it direct from the kiln upon their land, spreading it in the lump, and in that state ploughing it in directly, the sooner it being got from the kiln into the land, the better. The author concludes his communication with the following remarks:—"The lime will be found, if properly burnt, on a second ploughing, to be crumbled to pieces or powder, and on harrowing will be intimately mixed with the soil. From the heat evolved during the slacking of the lime underground, and its causticity, which diffuses itself by the agency of the moisture it meets with through the soil, it will be found to destroy, or at any rate be extremely obnoxious to wire-worms, slugs, grubs, and other enemies which the farmer has to contend with, and which are frequently the cause of failure in his crops, as well as to render most vegetable matter in the soil soluble, and food for future crops. These are the properties that *lime* has in contradistinction to *chalk* : the latter no doubt, is a very useful addition to make soils ; but do not go to the great expense of buying or burning lime, and then allow it to be converted again into chalk, or carbonate of lime, before you plough it into your land. If the turnip-fly is generated in the soil, lime applied in the manner I have directed, would, no doubt, do much towards its extermination; and the same effect and result would hold good in respect to the black caterpillar. In conclusion the good effects of applying lime in the manner recommended, I have myself experienced, and have received ample testimony to the like purport, from extensive agriculturists, who, at my suggestion, have adopted the plan."

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## LIQUID MANURE.

*Mr. Editor,*—When accounts of the great value of liquid manure, as proved by experiments, have been published, and its great utility is so evident on examining the subject, it is surprising that farmers do not give heed to the subject. Every one is aware that "manure is the farmer's gold mine," and great attention is given to the subject in making compost heaps, procuring various materials, and buying manure, often at a high price, all which may be profitable; but the far cheaper method of saving liquid manure, should not be neglected, as it generally is.

Animal bodies are constantly wasting away and acquiring a new supply of matter from food. The waste passes off in urine and contains a large amount of fertilizing matter, and being in a liquid state is well adapted to support plants; as soluble matter only can be taken up by the roots of plants. Though dung may appear far more valuable, from its body and substance, that part only which is soluble will be appropriated by the plant to its support.

Arthur Young manured four equal portions of a field, one with dry cut straw, another with straw soaked five hours in fresh urine, a third with straw soaked in like manner fifteen hours, and a fourth with straw soaked three days; to a fifth portion nothing was applied. The whole was tilled alike and sowed with grain. The product of the first was 30, the second 50, the third 63, the fourth 126, and the fifth 9. This experiment demonstrates, by the straw, the great value of vegetable matter for manure, and by the urine, the great fertilizing properties of liquid manure, which is wasted by most farmers in the country.

A farmer in Scotland dug a pit near his feeding stall, and filled it with loam, at an expense of 22 dollars. On this he conducted the urine of 14 cattle for five months, and the whole was saturated. The contents of the pit were 280 loads, which were applied at the rate of 40 loads to the acre. There was no perceptible difference between the crops on land thus manured, and on that to which an equal quantity of dung was applied. So he considered the liquid and solid manure of equal value when applied to the land; and the expense in the saving and application of liquid manure, will not justify its waste, and it will afford a large profit beyond all the expense and trouble.

There are various ways of saving liquid manure, and every farmer can follow that which is most convenient, and by experiments learn which is best. Dry loam, and litter, such as leaves, brakes, weeds, refuse straw, &c., may be thrown on the floor to absorb the moisture, or a portion of plaster sufficient to be used with the manure, may be used to absorb the moisture.

Another method is to make the floor light, with a channel at the back part, to drain the urine into a cistern, from which it may be carried to the field and sprinkled upon grass or tillage lands, or

used in a compost heap, or it may be directed on a quantity of loam placed to receive and absorb it.

The cattle house may be so constructed, that loam, sods, &c., may be placed under the floor to receive the liquid manure as it runs through. If dry loam be used, it will require much less to absorb the liquid manure, and it will be much lighter to cart.

As manure is of so much importance to the farmer, and as a large amount of liquid may be collected and applied conveniently, and at little expense, I hope the subject will no longer be neglected. Let every farmer contrive some method to save it this fall, and learn from his own experience its great value. **ECONOMY.**

[Farmer's Journal.]

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#### SALT AND THE GRUB WORM.

*Mr. Editor,*—Through the columns of your valuable paper, I hope to make the public acquainted with the value of the common black grub, as an agent in the cultivation of corn, when their labors are directed by the genius of man. This, sir, is a new position, a position which has for its foundation that there has nothing been made in vain, but that all things were made for the benefit and service of man and subject to his direction, and that it is only in the ignorance of man that worms and insects become a scourge upon the face of the earth. The grub has been literally cursed for following the instinct of his nature, which teaches him to eat the corn and reject the grass and sorrel, with which our fields are generally filled. Now, sir, if those who have cursed the grub, and have advised the Agriculturist to follow him with a sharp piece of tin or a knife, with which to decapitate him, or to tie him up in a rag and let him float down stream, had but applied common salt to the hills of corn in the place of gypsum, then, throughout the land, the merits of the grub would have been duly appreciated, then he would have destroyed the grass and sorrel in place of the corn,—thus materially aiding the Agriculturist.

In my humble opinion, the introduction of salt as a manure, and to prevent the ravages of the grub, will be an incalculable benefit to the country. Upon our farm we have used salt as a manure and as a protection to the corn from the grub, for a period of seven or eight years. We ought to be capable of judging of the benefits which we have received from using it. During this period we have missed the application but one season—the result was the loss of our crop: from a field of about twenty acres, we harvested but one cart load of corn, where, had not the grub injured it, we should in all probability have harvested fifty bushels to the acre. Last season, 1841, we planted about twenty acres; the grubs were so plenty that we despaired of protecting it from them; indeed, upon an average, I should think there were twenty to every hill of corn.

We applied one bushel of salt to the acre; the protection was ample; scarcely a single blade was touched, but every spear of grass and sorrel was destroyed by them, and in this way they assisted in the cultivation. The application should be made just as the corn is peeping out of the ground. The salt should be put exactly upon the hills, and at the rate of one bushel to the acre—more than one bushel to the acre would do no harm, provided it is put on with common judgment. One bushel is sufficient if properly applied.

If you think this communication will be of any benefit to agriculture, you will please publish it and oblige a constant reader of your valuable paper.

THOMAS N. ALLEN.

[S. W. Farmer.

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#### IRRIGATION.

IRRIGATION is chiefly employed on grass lands. The green sward here may not be broken up—what if it was? What if, by ploughing, it was exposed to the action of the air? Remember the properties of geine. Air converts the insoluble to soluble, by forming carbonic acid, that is, the air combines with the carbon of the geine, and forms that gas. Give the geine this oxygen, condensed in water; wet it with this concentrated oxygen, crowd it into geine, as would be done by overflowing a meadow with water. It penetrates every crack and cranny, and every mole's eye hole; it expels the carbonic acid imprisoned under the sod. It is doing the same work upon the untouched green sward, which would be effected by ploughing and tillage. The long and the short of the whole action of irrigation with pure limpid water is, that its absorbed oxygen, converts insoluble to soluble geine. Is this explanation which science offers, confirmed by practice?—The appeal is made to all who have attended either to the theory or practice of irrigation, to bear witness to its truth. It is not admitted, that running waters are alone fit for this purpose? That after remaining a few days, they are abated, and a new flood must cover the land? Is not this necessity, of renewing at short periods, the covering of water, which shows no deposit, a proof that it has given up some invisible agent to fertilize the earth? This invisible agent is oxygen. Is it not evident from the extreme slowness with which air is absorbed by water, that, if it were not for the running water, which every few days replaces that which has acted, that the practice of irrigation with pure water could be never successful?

This is the principle, a principle which having been wholly overlooked, has led to a waste of time and money, and has given to irrigation, in many minds, the odor, if not of a bad, at least, of a useless practice. Where, guided by this light of science, grass

lands can be irrigated, let it be done. If the experience of the most enlightened agriculturalists in Europe, is not all deception, by simple irrigation with running water, the farmer may cut two tons of hay, where he toils and sweats to rake off one.

But by far the most fertile source of increased crops, by irrigation, is found in the impurity of water; the salts and suspended matter, the slime and genial mud of freshets. Perhaps the effects due to this cause, cannot be better illustrated than by a statement of those substances, and their amount, which fill the waters of the Merrimack; a flood of blessings! which rolls by those engaged in the din and hot haste of manufacture, as unheeded as was the earthquake, which thundered and trembled and rolled away under the feet of the fierce soldiery, in an ancient battle. In the year 1838, during twenty-three days of freshets, from May till November, no less than 71,874,063 pounds of geine and salts rolled by the city of Lowell, borne seaward. During the five days of the great freshet, from January 28th to February 1st, 1839, no less than 35,970,807 pounds of the same matter rolled by at from the rate of 112,128 pounds, to 20,405,397 pounds per day; each cubic foot of water bearing onwards, from  $1\frac{1}{2}$  to  $30\frac{1}{2}$  grains. This is only the suspended matter. That which is chemically dissolved by the waters, the fine filmy deposit, which occurs in a few days after the coarser and grosser matters subside—and the matter ordinarily suspended in the water of the river added to the above, for the year 1838, give a grand total of 839,181 tons of salts and geine, which were rolled down in the water of the Merrimack river.

What is this matter? Is it of any agricultural value? The answer to the first question will answer both. The dissolved salts are sulphate and geate of lime, and the fine deposit occurring after the water has settled, is composed of one half of geine, and the remainder of salts of lime and silicates. The great agricultural value is found in the clayey deposit, which occurs in the first few days. The coarser part, that which collects about the foot of rocks, and falls and eddies is composed as follows:

Geine,	-	-	-	3.92
Silex,	-	-	-	72.70
Oxide of Iron,	-	-	-	9.15
Alumnia,	-	-	-	8.30
Lime,	-	-	-	0.51
Magnesia,	-	-	-	0.10

But considering the elements as we have usually treated them, as silicates, salts and geine, the composition of the several deposits is shown in the following table:

	Geine.		Sulphate of lime.	Ph. of lime.	Sil.
	Sol.	In.			
The coarse deposit above,	2.06	1.86	0.74	0.90	94.44
Freshet, 1839,	5.40	6.50	2.34	1.20	84.66
Freshet, July 7—18, 1839,	8.80	6.30	3.20	0.60	81.20

If the doctrine of the action of silicates, salts and geine, upon each other when aided by growing plants, is considered, it cannot fail to be perceived, that the fertility of soils, periodically overflowed by turbid waters, is owing to the elements, salts and geine which it contains, and to the exquisitely finely divided state of the silicates which form the bulk of the deposit. The carbonic acid of the air, acts on each atom of silicate, while owing to the geine, having been, as it were, irrigated, the oxygen of the air and water, must put that into a state to evolve carbonic acid. Hence, the silicates are at once decomposed and their alkali liberated. How beautiful! It seems like a special interposition of that Beneficent Power, whose blessings, while they fill us with wondering admiration, at the infinite skill, which directs every change in the material universe, should teach us also, that these changes are held up to us, not only to admire, but in some humble degree to imitate.—Whenever man, “the faithful servant and interpreter of nature,” has thus learned the lessons propounded by an Infinite mind, he finds when he humbly imitates nature’s laws, she is a kind and indulgent parent. She opens her hand liberally, and gives fertility by irrigation, and rivers and streams, like holy water, sprinkled by a reverend father, fructify all they bedew. With hearts thus attuned, by the observation of the laws of nature, they respond to the gentle vibrations, caused by the descent of genial and fertilizing showers.

Rain is only natural irrigation; the water is found like that of rivers, rich in oxygen, and organic matter. The fertilizing power of rain, is referred to the same causes, which lead to irrigation, to the salts and geine which rain water contains. Several chemists have proved the existence of saline matters and organic substances in the air. The falling rain, carries down with it salts of ammonia, of lime, and a flocky organic matter. These all may be supposed floating in the air. The dry soils, give to the winds an impalpable dust, its silicates and geine. When hailstones which have been formed in the regions of perpetual frost, exhibit almost the same substances, which are contained in rain water, the height at which these matters float, would almost compel the supposition that they exist in a gaseous state. From the examination of hailstones by Girardin, a French chemist, it appears, that no sensible trace of ammonia was detected during the evaporation of their water, but there was found a notable quantity of lime and sulphuric acid; and above all, a large proportion of an organic substance, containing nitrogen. Melted hailstones have the appearance of water, containing a drop or two of milk; by standing, the water grows clear, and the flocky matter which settles, burns with the smell of animal matter and evolves ammonia.

It is a question whether, even at the Giessen laboratory this was not the source of the ammonia, there discovered in rain water. It is taken for granted, that the ammonia in rain water existed as a

volatile carbonate, because it was found to pass over in distillation. So did a volatile product, which always discolored the crystals of sal ammoniac, procured by adding muriatic acid to the distilled water. This discolored matter, was noticed a century ago, by Margraf. Later chemists have also detected ammoniacal salts in rain water, but no volatile carbonate of that base. It is well known that muriate of soda arises in evaporation, so does chromate of potash and several other salts. If in distilling rain water, the ammonia did not pass over in the volatile organic discolored product, it may have gone over as muriate of ammonia. It is not questioned that ammoniacal salts exist in rain and snow water. The fact that it there exists as carbonate, seems to be assumed and is incompatible with the salts which have been heretofore obtained, from rain, snow and hail. This subject has of late excited much attention, and as the existence of salts in snow is intimately connected with the old saying, that "the snow is the poor man's manure," it may be worth while to examine the foundation of this proverb. Like all others of this class, it will be found to rest on observation and is supported by experiment. In 1751, Margraf, in the neighborhood of Berlin, after it had snowed several hours, collected in glass vessels, as much falling snow as afforded 3600 ounces of water. This carefully evaporated, afforded 60 grains of calcareous matter, with some grains of muriatic acid, and traces of nitrous vapor. An equal quantity of rain water, afforded 100 grains calcareous matter, with some muriatic acid; and in both cases the matter was discolored by an oily substance. A similar result was obtained long ago in Ireland, by Dr. Ruddy, who found in a gallon of snow water 4 grains, and in one gallon of rain water, 6 grains of calcareous matter. This is about the proportion found by Margraf, and would give for each inch of snow water, about 10 pounds of salts per acre. From the existence of free acids in this case, it is evident that no carbonate of ammonia could have there existed. There are some experiments performed by our countryman, Dr. Williams, formerly Hollis Professor of Mathematics and Natural Philosophy in Harvard College, and detailed in the first volume of his history of Vermont, where the experiments were performed. In 1791, six gallons of fresh falling snow water, afforded by evaporation, 11 grains calcareous matter, 2 grains of saline matter, 5 grains of a dark brown oily matter. In January, 1792, six gallons of snow water, from snow lying three inches deep on the grass, on an area of 16 feet square, where it had lain 59 days, covered with a depth of 27 inches of snow, afforded the same salts as above, and 105 grains of this oily matter. This is the most remarkable fact, and may afford some weight to the suggestion before made, that organic matter exists gaseous in the air. It must have been drawn up by capillary attraction, or evolved from the surface of the earth. It is there condensed by the snow and returned to the earth, impregnated with its salts of lime and ammonia. The snow is "the

poor man's manure." It not only adds salts and geine, but prevents the escape of the last. But is it possible that it should escape in the cold? Doubtless it does, when the ground is not frozen. The snow by its warm mantle, actually prevents the earth growing colder, and as has been ingeniously suggested, keeps up an imperfect vegetation. The snow thaws frozen ground. In 1791, Professor Williams found that the ground which had been frozen six inches in depth, before the snow fell, not only had this frost extracted in a few weeks by snow, but that the ground, six inches below the surface, had a temperature of 39 degrees. This slight elevation of temperature was enough to allow the gaseous exhalation of organic matter, which was found to exceed that of fresh fallen snow, by 20 times. This quantity in snow three inches deep, would give per acre 40 pounds, and to this are to be added, 5 pounds of salts. If this geine is not a natural addition in weight, it has undergone a transformation and become soluble. Besides, every inch of fresh fallen snow, actually adds a little of this same matter; it will not be extravagant to estimate the total addition of geine at 50 pounds per acre for the winter. This added to the warming effects of snow, shows that it may have a genial and enriching power on vegetation, independent of its ammonia. The old notion of the existence of nitre in snow, is not supported by evidence; but in whatever view we consider the salts of lime, in snow and rain water, it is difficult to believe that carbonate of ammonia exists in the atmospheric air.

*Dana's Muck Manual.*

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#### OATS.

Will the editor please state in the next number of the *Farmer*, the usual quantity of oats sown on an acre, by the common farmers in England and Ireland, and also the most suitable quantity for New-England, on ordinary or highly cultivated land. Any remarks upon the subject which the editor may have time to make, would be read with interest by a subscriber. E.

The usual quantity of oats sown to an acre in this country is three bushels. The quantity sown in England is from four to six bushels per acre. The English farmers are in the habit of sowing more seed to an acre than is done with us. Of the potato oat, one of their heaviest oats, less seed is used than of others, because it has no awns, and a half bushel measure contains more oats in number than of other kinds. The cultivation of land in England is very much more careful and thorough than with us; this may be a reason for sowing more seed. The quantity of seed to be sown upon an acre of any grain, deserves consideration, and especially experiment. One of the best farmers in Massachusetts is accustomed to sow three bushels of rye, and says he finds an advantage in doing it, whereas few farmers sow more than one bushel to the

acre. Of spring wheat our farmers sow usually two bushels; of winter wheat one and a half. In sowing wheat in autumn, a difference in the quantity of seed is made by judicious farmers, as that which is sowed early, has more opportunity to spread, or as is termed, to tiller well, and consequently less seed is required.—Where the land is rich and the cultivation good, we are strongly of an opinion that too little seed is generally sown. Where the grain is thin, the crop is more apt to suffer from drought. Oats require a moist and rather cold climate. We have known more than one hundred bushels upon an acre; and an average crop of ninety-six bushels to the acre, from a field of eight acres. The general average through the country is not over forty bushels. No attention is paid to the selection of seed with us; but abroad the largest oats are sometimes picked out for sowing. We have no doubt that more care in this respect would be amply compensated. A careful selection of the earliest, fullest, heaviest and brightest plants in the field, would presently give a farmer a crop much above ordinary. Of the two kinds cultivated among us, the common branching oat and the Tartarian or horse-mane oat, where the panicles hang all on one side, the latter is thought to yield the heaviest crop. An eminent farmer in New-Hampshire, in whose judgment we have great reliance, prefers this kind, and his crops for years have averaged about sixty bushels per acre. Some persons allow the kinds to become mixed, but they do not ripen at the same time; and the common oat gets into a condition to waste or shell out before the Tartarian becomes ready for harvest. Oats should be cut early; they are less liable to waste, and the straw is deemed better for the stock.

[N. E. Farmer.]

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For the Southern Agriculturist.

#### RULE OF MEASURING CORN OR OTHER GRAIN IN BULK.

Ascertain the exact number of cubic feet occupied by the grain, and 80 per cent of that amount will give correctly, the number of bushels.

If corn on the cob will yield one bushel of clean for every two bushels, then 40 per cent of the number of cubic feet will be the exact number of clean bushels.

H.

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## HORTICULTURE.

### POTATOES.

There is no use to me in proving that Mr. Barnum, of Vermont, raised 2,000 bushels of potatoes on an acre, except that of provoking me to ask *how it was done*. I desire to raise two thousand bushels to the acre; but Mr. Barnum and the Editor do not tell me how to do it.

*Facts*, which tell only what has been done, are not satisfactory; we want *truths* which tell what may be done, and *how* it may be done.

S. W.

We have had from various sources, hints of wishes that we would republish Mr. Barnum's statement to which we have referred, (vol. xiii. p. 329. N. E. Farmer.) As many of our subscribers are probably not in possession of that volume, we take the hints, and republish the statement so far as *the mode of culture* is concerned.

We are glad that S. W. wants to raise 2,000 bushels per acre, and hope he may succeed according to his wishes. We have faith that it *can* be done, but are no firm believer that it will *often* be done.

We have made a hasty casting of figures, and find that if one should plant in hills 3 feet 3 inches apart each way, and put one potato in each hill, there will be required to seed an acre 4,000 potatoes. Mr. Barnum's distances will require 31,360. We have just weighed one half a peck of eastern blue noses, (rather small,) and find the weight 8 lbs.; and a common sized potato of the lot weighs 4 oz. This will give 32 potatoes in the half peck, or 256 per bushel. Dividing 4,000 by 256, we obtain 15 5-8 bushels as a common seeding. And dividing 31,360 by 256, we get 122½ bushels as the seed required in Mr. Barnum's way. The expense of seeding and of tilling is great, but try a small patch, and see if you do not get well paid for the expense.—Ed.

From Mr. Barnum's statement:—

*Preparation for Planting.*—"Whatever soil may be selected for this purpose, to insure a large crop, it should be highly manured with compost, decomposed vegetables or barn yard manure—the latter I consider preferable, when it can be obtained with convenience; if raw or coarse be made use of, it should be spread immediately before the first ploughing, on the same day, to prevent the evaporation of its best qualities, which will rapidly depart if exposed to the sun and atmosphere.

"The first should be deep ploughing, and may be done as early as suits the convenience of the cultivator. If a stiff marl or clay soil, it would be well to have it ploughed late in the fall previous

to planting. Where compost or other substances not liable to fermentation, are intended as a manure, it is better the spreading should be omitted until just before the last ploughing, after which it should be thoroughly harrowed fine and smooth as possible, then take a narrow light cultivator, or small plough calculated for turning a deep narrow furrow; with this instrument lay your land in drills, twenty inches asunder and four inches in depth, running north and south, if practicable, to admit the rays of the sun to strike the plant equally on both sides; put into the bottom of the furrows or drills about two inches of well rotted barn-yard manure or its equivalent, then drop your potatoes, if of the common size, or what is more important, that they contain about the usual quantity of eyes; if more, they should be cut, to prevent too many stalks shooting up together. Put a single potato in the drills or trenches 10 inches apart; the first should remain uncovered until the second one is deposited. Place them diagonally in the drills, which will afford more space between the potatoes one way, than if laid at right angles in the rows. The covering may be performed with a hoe, first hauling in the furrow raised on each side the drill, then carefully take from the centre of the space the soil to finish the soil to finish the covering to the depth of  $3\frac{1}{2}$  or 4 inches. By taking the earth from the centre of the space on either side to the width of 3 inches, it will leave a drain of 6 inches in the centre of the space, and a hill of 14 inches in width, gently descending from the drill to the drain; the width and depth of the drill will be sufficient to protect the plant against any injurious effects of a scorching sun or drenching rain. The drains in the centre will at all times be found sufficient to admit the surplus water to pass off. I am not at all tenacious about the instrument to be made use of for opening the trenches to receive the manure and potatoes; this work should be well done, and may be performed with a common hoe, with much uniformity and accuracy, by stretching a line to direct the operation; it is true that the labor cannot be performed with the same facility as with a horse, but it can be better done, and I think at less expense, taking into consideration the labor of the man to hold, the boy to ride, and the horse to draw the machine.

*Dressing, Hoeing, etc.*—"When the plant makes its appearance above the surface, the following mixture may be used: For each acre, take one bushel of plaster and two bushels good ashes and sow it broad cast as even as possible. A moist day is preferable for this operation, for want of it a still evening will do.

"I consider this mixture decidedly more beneficial and much safer than plaster or ashes alone. The alkali and nitre contained in the ashes lose none of their fertilizing qualities in a moist season, and the invaluable properties of the plaster are fully developed in a dry one, by decomposing the atmosphere and retaining to a much later period in the morning the moisture of the evening

dews. There are but few plants in our country that receive so great a share of their nourishment from the atmosphere as the potato. The time for dressing or hoeing will be found difficult to describe, and must be left to the judgment of the cultivator; it should however, in all climates be done as early as the first buds for blossoms make their appearance.

The operation of hilling should be performed once and *once only*, during the season; if repeated after the potato is formed, it will cause young shoots to spring up, which retards the growth of the potato and diminishes its size. If weeds spring up at any time, they should be kept down by the hand or hoe, which can be done without disturbing the growing stalk.

My manner of *hoeing* or *hilling* is not to haul in the earth from the spaces between the hills or rows, but to bring on fresh earth sufficient to raise the hill around the plant  $1\frac{1}{2}$  or 2 inches. In a wet season the lesser quantity will be sufficient; in a dry one, the larger quantity will not be found too much. The substance for this purpose may consist of the scrapings of ditches or filthy streets, earth from a barn yard that requires levelling; where convenient, it may be taken from swamps, marshes, the beds and banks of rivers or small sluggish streams at low water. If planted on a clay soil, fresh loam taken at any depth from the surface, even if it partakes largely of fine sand, will be found an excellent top-dressing. If planted on a loamy soil, the earth taken from clay pits, clay or slaty soil, will answer a valuable purpose. In fact, there are but few farms in the country but what may be furnished with some suitable substance for top-dressing if sought for. The hoeing and hilling may be performed with facility by the aid of a horse and cart, the horse travelling in the centre of a space between the drills, the cart wheels occupying the two adjoining ones, thereby avoiding any disturbance or injury to the growing plants. The time for collecting the top dressing may be regulated by the farmer's own convenience; the earlier the better. Deposited in large piles in or near the potato field, is the most suitable place for distribution."

[*New England Farmer.*]

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#### THE POTATO.

*Mr. Editor:*—It is perhaps not generally known to the subscribers of the Farmers' Cabinet, that in the potato there are two parts, which, if separated and planted at the same time, one will produce tubers fit for the table eight or ten days earlier than the other. This fact has fallen under my own observation, and is the plan I now pursue in order to obtain an early supply for my table, fine and very mealy. The apex or small end of the potato, which is generally full of eyes, is that part which produces the earliest—the middle or body of the potato produces later, and always large

ones. The butt or naval end is worthless, except for feeding stock, and if planted produces very indifferent small ones, and often none at all, the eyes, if any, being imperfectly formed. The potato being cut two weeks before planted, and spread on a floor, that the wounds may heal, separating the small end from the middle, then cutting off the naval or butt, the body or middle of the potato is then divided into two pieces lengthwise, taking care to have always the largest and finest selected, being convinced that if none but large potatoes are planted, large ones will be again produced; small things produce small things again, and therefore no small potatoes should be planted. This practice is too prevalent, and may account for the many varieties and small potatoes met with in our markets. Who would not prefer a large mealy potato to a small one, that will take hours to boil soft, and then may only be fit to feed the cattle with?

For several past I have adopted the plan of putting potatoes into the ground late in the fall, covering them with manure, sometimes with tanners' waste bark, and always have succeeded in raising a fine early crop. Last fall I had taken up some as fine and large Mercer potatoes as any one could wish; they were covered with tan six inches thick the preceding fall; many weighed sixteen ounces. No particular care or attention was bestowed upon them through the summer, the tan not permitting any weeds to trouble them, or to draw out the nourishment from the earth; they had therefore all the benefit of the soil, kept moist and clean, for the tan will keep the ground moist and clean, and in an improved state in the driest season. I have found the great advantage of it to my asparagus and strawberry beds, which are annually covered with it.

The potato I consider so valuable and indispensable a vegetable, and having never seen a suggestion in print of separating the potato and planting each by itself, that I have been induced to send you this imperfect and hastily drawn up communication. Perhaps you may think it worthy a place in the Farmers' Cabinet, and if so, should be pleased to hear that some of its patrons will try the experiment of planting separately each part of the tuber, believing that the potato may be much improved by a due regard to the above suggestion.

J. F. H.

*Lancaster, Feb. 26th, 1842.*

[*Agriculturist.*

#### MODE OF INCREASING THE GROWTH OF POTATOES.

THE flowers being cut off as they appeared on the plants, the number of potatoes produced was much greater than where the blossoms remained untouched. Early in October, the stem and leaves of the plants which had not borne flowers were strong and green; the other yellow and in a state of decay. The plants which had been stripped of flowers produced (on the same space

of ground) about four times the weight of large potatoes; very few small ones being found. Those on which flowers and fruit had been left, produced but a small number of middling sized potatoes, with a great number of small ones from the size of a common filbert to that of a walnut.

[Agriculturist.]

#### CAUSES OF SEEDS NOT GERMINATING.

WE have known and heard of considerable loss and disappointment from seeds, particularly onion seeds, not growing. We have thought and inquired in reference to the cause, and the result of our cogitations and inquiries may be thus stated.

Without a certain degree of moisture, seeds will not germinate. On dry sandy soils, and in a dry season, it seems highly probable, then, that seeds may be deprived of the requisite degree of moisture: perhaps receiving just as much as will mould them and destroy their vitality, or being so near the surface as to be injured by the sun's heat and light.

But the seeds may have germinated, and have commenced to send out their roots and stem stalks, and yet be destroyed. If the soil is not pressed closely to the seeds, and very dry weather occurs just at this period of the process of germination, the root being too distant from the soil, and too feeble to draw any supply of moisture, the liquid food of the plant contained in the fermented seed may be dried up, and the life thus destroyed.

If you would avoid disappointment and loss from seeds failing to grow, the preventive process is indicated by a knowledge of the causes most frequently productive of this result, which we think are those stated above. If you sprout your seeds before putting them into the ground, you will preserve them from the first cause of failure, but if you pulverize your soil thoroughly and press it in this state with hoe, spade, or roller, upon the seeds thus sprouted, the root stem will soon and surely derive sufficient moisture from the soil.

In a few instances I have found my neighbors blaming the seed as useless, particularly of onions, carrots and parsnips, when I have obtained a little of the seed, and found it to sprout quite well. You may easily save yourselves from such reflections, or from the temptation to blame others, by steeping the suspected seed in warm or tepid water from six to twenty-four hours, according to the size and hardness of the seed, and then setting it away in a warmish place for a day or two. If good it will sprout in this time; if kept warm in a darkish place, and it does not sprout in this time, the seed is faulty.

In connexion with this subject, I may state that several circumstances incline me to the belief that corn which has been sprouted—no matter in what steep—is safe from the ravages of the red or

wire-worm. It has been fashionable to steep in a strong solution of copperas, and to describe the safety of the seed in this state, not to the change which fermentation has produced in the germ or chit which is usually first attacked, but to the change in the taste from the copperas. We have known corn soaked in simple water—in water alone—to escape from the attacks of the worm as well as that soaked in a copperas steep. Until this matter is made more certain however, I would hold it bad husbandry to neglect the copperas, as in addition to the change produced by heat and moisture, we have also the disagreeable taste communicated by this salt.

[Cultivator.

## THE ORCHARD.

### NEW METHOD OF GRAFTING APPLE TREES.

PLANT the seed in rows at a suitable distance from each other, and the hills say about five feet apart in each row. But one tree should be suffered to grow in a place. Now when the young tree is sufficiently grown, in the spring of the second or third year, any quality of fruit may be grafted into it in the following manner: First, bend the tree over and obtain for it a firm resting place, either on a block or a board resting on the knee, (after it has been divested of its branches) and with a stout sharp-pointed knife, pierce holes directly through the centre of the tree, about five inches apart, into which the scions are to be introduced—leaving above, two or three buds. A trench is then to be dug, in a direct line between the trees, about four inches deep, and the whole tree bent down and buried, leaving the tops of the scions above ground. In this new condition, the scions become uniformly thrifty young trees, supported and nourished from the buried tree, from which issue, in due time, roots from its entire length. The second year from this operation, the whole parent tree may be dug up, the new growth sawed apart, and transplanted. It will thus be seen that if the tree is five feet in height, ten or twelve young trees, of whatever quality is chosen, may be obtained in this way, whereas by the ordinary method of grafting, there could be but one, provided the graft lived. The young scion will bear fruit, thus transplanted, in the same time it would had it been grafted into a tree fifteen years old.

I know not whether this process is new among your agricultural community at the North; but I have repeatedly witnessed it in Georgia and Alabama, and I have been informed by some of the best horticulturists in those States, that it is always successful.

Yours, respectfully,

HENRY LEE.

The foregoing communication of Dr. Lee, deserves the attention of every farmer and gardener.

[Ed. Far. Gaz.

## MISCELLANEOUS.

## SALTING FLOWERS.

BY ALEXANDER WALSH.

It is asserted by a distinguished writer of great antiquity, that "he may conquer all things who mingles the useful with the sweet." It may not be generally known, that common salt applied to flowers, will preserve them with nearly all their peculiar odor, undiminished for several years.

Roses, and other flowers, and aromatic plants, may be picked and salted, and kept in that state, until a convenient time for distilling.

By this method the season does not hurry the manufacture. Vegetables may be distilled in New-York, which were gathered in France or Italy, or even in Asia; and the perfumed water, or essential oil, will be in nearly as great perfection, both as to quantity and odor, as if the leaves or plants were fresh gathered.

The salting may be performed thus: Take one and a half pounds of rose leaves, or whatever other vegetable substance you choose, add a half pound of salt, and rub them together about four minutes. The friction produced by the salt forcing out the juice of the flower, will reduce the whole to an aromatic paste, which must be carefully collected, and kept in a tight vessel, in a good place, until wanted for distillation. When to be distilled, place the paste in the still or retort, with twice its weight in water.

I noticed in New-York, in March last, at a public sale, of drugs and dye stuffs, a large quantity of articles connected with the line of perfumery, such as rose water, cassia buds, myrrh, frankincense, &c., imported from Europe and among them, two large packages of dried rose leaves. Although every other article went off readily, and at a fair price, yet the rose leaves could not obtain a bid, though some of the first perfumers in the United States were present. Now had these been preserved in salt, and their value known, they would have commanded a readier sale than any other article offered.

[Cultivator.]

## THE PLACE TO DIG A WELL.

*Messrs. Gaylord & Tucker*,—I saw in your paper an inquiry for the best mode of finding water, or rather a place to dig a well. I have had some information on the subject, but do not profess to be a very experienced hand in the business. The way I manage, is to choose a clear day, when there are no clouds to interfere with the eye; about 1 or 2 o'clock, I go out to the place I wish to look for water; I turn my back toward the sun, and look toward the

sky, to examine the vapors that arise from the ground into the air, and if there is a vein of water in that direction, there will appear a vapor to rise quick to a certain height, and then it will move off in a level, in the same way that the smoke will rise from a chimney over a very hot fire of coals where there is no smoke, and will rise as high above the surface as the water is below the top of the earth. The facts are, that water must have vent, and the deeper in the earth the water lies, the harder the pressure and the higher it will rise. Now, as I have stated, I am not a professed water witch I would wish to hear from those of more experience, as there are many who do profess to know, and say that they can trace a vein of water not larger than a rye straw, that lies 60 feet under ground, and tell us as to the quality of water. I know that many men wish to keep such things secret, but I think it the duty of every man or woman that can be useful to their fellow beings, to do so. As to qualities of water, all I know is, that salt water gives a stronger cloud than fresh, and lime water gives a whiter cloud than pure soft water. Any information that can be given on the subject, will be thankfully received.

W. STOWELL.

Newark, Ill., May 30, 1840.

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#### TO PRESERVE BACON FROM FLIES.

*Messrs. Editors,*—My simple mode of preserving Bacon may be of use to some of your readers. I lay it down in charcoal, I find it preserved from the fly and kept perfectly sweet, without any further trouble than putting the coal between the several layers. I do not even pound the coal up fine, but take it from the coal heap just as it comes, coarse and fine together. When I want a cut of bacon, I take it off, and put the remainder back, or throwing some of the fine charcoal on the fresh cut surface, hang up the remainder, and so cut from it until it is all consumed. The flies will not touch it. The coal dust is easily washed off before cooking, and the coal in which it has been packed, is as good for burning as ever.

RUSTICUS JUNIOR.

*Cultivator.*

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#### TO WASH WOOLEN GOODS.

The art of washing woolen goods so as to prevent them from shrinking, is one of the desiderata in domestic economy worthy of being recorded, and it is therefore with satisfaction that we explain this simple process to our readers. All descriptions of woolen goods should be washed in very hot water, with soap, and as soon as the article is cleansed, immerse it in cold water, let it then be wrung and hung up to dry.

## THE BEE MOTH.

Mr. T. Hudson, of Hudson, Ohio, states in the *Ravenna Cabinet*, that in his opinion, the ravages of the great enemy of bees, the bee moth, may be prevented by the simple process of thoroughly saturating the hives with salt, as the miller will not deposite its eggs in the hive thus prepared. His plan is to plane and prepare the boards for the hive and then let them remain for a few days immersed in a strong brine. His own personal observation and experience as an apiarian, has led him to the above conclusions and practice.

[*Cleveland Herald.*]

☞ In the spring, about the time the bees commence working, we whitewash our hives for the purpose of promoting the health of the bees and preventing depredations from the bee moth. We put a good portion of fine salt in the white-wash, and put it on the hives, outside and inside up to the comb, and apply it very liberally on the lower edge of the hive and on the board at the bottom.

We learned the value of this by experiments on sick bees. A number of patients were put in a glass and various remedies tried. When this was offered they commenced eating it and recovered in a few hours. We then applied the white wash to six or eight hives in which the bees were dying fast, and had ceased to labor, and the next day they were all in good health, and able to do a good day's work.

We are never troubled with the bee moth or sick bees. We apply the white-wash to the lower edges of the hive, and on the board a few times during summer. The bees seemed pleased with it, and many of them take a good dose, though they look well. They doubtless, consider prevention better than cure.

[*Ed. Far. Jour.*]

## SALT FOR HOGS.

Hogs, during the process of fatening, should be supplied with salt as often as once a week. It is no less advantageous to them than the ox, the cow or the sheep, and when liberally given, is a preventive of many diseases, to which from their continual confinement, and the effects of hearty food, they are inevitably exposed. Some hogs, also, are greatly benefited by it, and will partake of it once or twice a week as eagerly and to all appearance, with as good zest as they do of corn or meal. Charcoal is also highly salutary in its influences upon the hog.

## TO MAKE YEAST.

Two middling sized boiled potatoes, add a pint of boiling water and two table spoonsful of brown sugar. One pint of hot water should be applied to every half pint of the compound. Hot water is better in warm weather. This yeast being made without flour will keep longer, and is said to be much better than any previously in use.

## MISSISSIPPI ALMONDS.

We are indebted to our friend and brother craftsman, M. SHANNON, Esq., of the *Vicksburg Whig*, for a present altogether novel to us—it being a handful of *softshelled Almonds*, the produce of his own garden.

Mr. Shannon informs us that he has but one tree—that its growth is tolerably thrifty, but that the greater part of the fruit drop off before maturity. This year he has gathered more than a pint of the shelled fruit—last year, half that quantity. Those of last year, after being dried, was as fine as any ever imported. He had also a tree of the hard or bitter Almond, which flourished as finely as any peach tree—was loaded every year with fruit that ripened well—but, as they were of little use, and brother Shannon had but little ground to spare, he dug it up.

An Almond, as every one perceives, differs but little from a peach-stone—and the skin covering it is very much like the pulp of a peach, except that it is thin. These, at least, which we have received have but a thin coat, with a slight fuzz on the surface—considerably withered, and, when pulled off, it has much the appearance and smell of dried peach nuts, but is bitter to the taste. The tree, too, resembles a peach tree so much that the difference can hardly be perceived. It can be budded on a peach stock as easily as one peach can be budded on another. *S. W. Farmer.*

## TO CHOOSE A STOCK OF BEES.

Place your ear close to the hive and give it a tap; if the inmates give a short and sudden buzz, all is right; but if it be a languid hum, or rather a purring sound, the hive must be rejected, for the bees are weak.

## WORMS IN SWINE.

Corn soaked in ley, perseveringly used, has cured the disease in swine called kidney-worm, in numerous instances. A neighbor of ours, succeeded with it in a very bad case. If breeders would give their hogs plenty of salt and brimstone, they would rarely be troubled with diseases. *Dollar Farmer.*

## MANY FACTS IN FEW WORDS.

A legastone is 14 lbs., or the eighth of a hundred in England, and 16 lbs. in Holland.

The fathom, six feet, is derived from the height of a full grown man. A hand, in horse measure, is four inches.

An Irish mile is 2,240 yards; a Scotch mile is 1,984 yards; an English or statute mile, is 1,760 yards; German, 1,806; Turkish, 1,826.

An acre is 4,840 square feet, or 69 yards, 1 foot  $8\frac{1}{2}$  inches each way. A square mile, 1,760 yards each way, contains 650 acres.

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